

APPENDIX 1

Method 1

5 Step 1 *Pre correction of images*: Gamma Correction of the screen and Contrast Correction (Weber's law).

Step 2 Construction of the *Field of Motion* image based on the Source Sequence and for each image.

10 Step 3 *Segmentation* of the Field of Motion. For each image, a Segmentation into Regions is thus available, based on the Motion information. Each *Region(v)* is therefore characterized by a velocity vector v . Each pixel of each image (Source or Decoded) belongs to a Region corresponding to an estimated velocity v (in cycles per degree).

15 Step 4 For each *Region(v)*, *Construction of the corresponding Psychovisual Filter*, on the basis of a BDD filter $\{H(f_s, v_i)_{i=1, \dots, N}\}$ and interpolation of the filters.

20 Step 5 For each *Region(v)*, *Synthesis of the Spatial Filter* by inverse FFT:

$$h(s, v) = FFT^{-1}[H(f_s, v)]$$

Step 6 *Filtering of the Source and Decoded images* to obtain two other images:

25 SourceF and DecodedF.

Each pixel P of the Source/Decoded image is filtered by the Filter $h(s, v)$, corresponding to the *Region(v)* to which P belongs, centred on P and applied to the Source/Decoded image.

30 Step 7 *Construction of the Map of Disparities or psychovisual Errors*

$$Err = (SourceF - DecodedF)^n \quad (n = 2, \text{ or other})$$